POINTS TO CONSIDER

NON TECHNICAL ABSTRACT

This study deals with the treatment of Adenovirus (Ad) infections occurring in patients following hemopoieitic stem cell transplants (HSCT). These viral infections are a major cause of illness and death post stem cell transplant.

In normal people, Ad infection causes a cold like infection or "red-eye" and usually gets better when the immune system controls the infection. There are over 51 different types of this virus, and we can become exposed countless times throughout our lives, but often our immune system controls the infection so well that we do not exhibit any symptoms at all. After a transplant, while the new immune system is growing back, we can become newly exposed to Ad and, when this happens the adenovirus can cause life-threatening disease. Patients can develop fatal damage to organs such as the lungs, gut, and eyes. Although there are some drugs available for the treatment of Ad infection, they do not work well.

We want to see if we can prevent Ad infection from happening by giving the patient a kind of white blood cell called T-lymphocytes, which have been trained to attack Ad-infected cells. We will grow these T-lymphocytes from blood taken from the donor around the time of the bone marrow harvest, and then we will test them to make sure they can kill the virus infected cells.

The main purpose of this study is to see if these T-lymphocytes are safe. To make these Ad-specific T lymphocytes we will obtain blood from the stem cell donor and transfer Ad into another type of blood cell, called monocytes. These cells can then stimulate the T lymphocytes and train them to kill cells infected with Ad. We will then grow these Ad-specific T lymphocytes by more stimulation with Ad-infected monocytes and a third type of blood cell called a B lymphoblast from the donor. After testing the T –lymphocytes, we will inject them into patients after transplant who are at high risk of serious Ad virus infection. We will make sure the injected cells are safe and see if they affect the growth and behavior of adenoviruses in the patient's own body.